

# Comparative clauses and cross linguistic variation: a syntactic approach

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## 1 Introduction

The architecture of comparatives raises three major related questions: the categorial status of the comparative connector; the correlation between the overt quantificational/ degree element and the comparative connector heading the second term of comparison; and the phrasal or sentential nature of the comparative constituent.

Adopting the current Principles and Parameters approach (Chomsky 2004, 2005), we will concentrate on the first two issues, paying attention to sentential comparatives and contrasting European Portuguese (henceforth, EP) with other languages, especially Spanish and Italian. We will analyse canonical comparatives of superiority and inferiority, involving the expressions *mais ... do que* ‘more...than’, *menos ... do que* ‘less...than’, leaving aside equative comparatives, with the forms *tão/tanto ... como* ‘as...as’.

Mainly focussing on structures where the comparative quantifier affects a nominal constituent, we will show that Romance languages, in particular EP, Italian and Spanish, share the property of exhibiting two sorts of comparative sentences: canonical comparatives, presenting a strong quantificational content (which may be instantiated by (a kind of) Free Relative with an overt quantificational *wh* element, as in Italian, or CPs headed by a null quantifier, as in EP) and relative comparatives, with a weaker quantificational content, which correspond to free or headed relatives without any quantificational item.

We also show that, at least as far as EP is concerned, the dependency relation between the overt quantificational/ degree element and the comparative connector heading the second term of comparison is adequately analysed as a case of correlative coordination involving quantificational correlates. The scope of the overt quantificational/ degree element over the whole comparative construction is captured at the relevant level for semantic interpretation, i.e. at SEM. In this interface level, the quantificational/ degree constituent, due to its quantificational nature, is adjoined to the correlative coordination phrase, CoP, thus resulting a configuration where the quantificational

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constituent and the whole CoP headed by the comparative connector are interpreted as establishing a predication relation.

The paper is guided by two central aims: to provide an empirically grounded answer to the categorial status of the comparative connector *do que* in EP and to determine the nature of the comparative clauses in this language. Thus, the text is organized as follows: in section 2, we discuss the possibility of analysing the comparative connector *do que* in EP according to the classical approach, which assumes that sentential comparatives are introduced by a preposition followed by a *wh*P sentence, close to a relative clause; we will show that there is no evidence for such an analysis in this language. In section 3, we sketch the structural configurations involved in comparative clauses in EP, taking into account that they do not necessarily require the presence of a *wh*P and may only present a quantificational head. In section 4, we show that the analyses proposed in the previous section account for the islands effects exhibited by sentential comparatives. In section 5, we focus on the nature of the relation between the quantificational/ degree element and the comparative clause: discussing the arguments for the subordination status of the comparative connector, we show that they do not account for clausal comparatives in EP and propose an alternative analysis based on correlative coordination. In section 6 we show that this specific kind of coordination, associated to the quantifier nature of the degree constituent, captures the dependency relation between the two parts of the comparative construction, classically subsumed under the notion of subordination. In section 7, we present some concluding remarks.

## 2 The *wh*-approach to sentential comparatives and the comparative connector

Since Chomsky (1977), studies on clausal comparatives in English have analysed them as an instance of subordination, specifically as *wh*-CPs inserted inside PPs, headed by *than*, as represented in (1b) – see Kennedy (1997), Pancheva (2006):<sup>1</sup>

- (1) a. John is taller than Mary is.  
       b. John is taller [<sub>PP</sub> *than* [<sub>CP</sub> [<sub>wh</sub>  $\emptyset$ ]<sub>i</sub> [<sub>TP</sub> Mary is [-] <sub>i</sub>]]

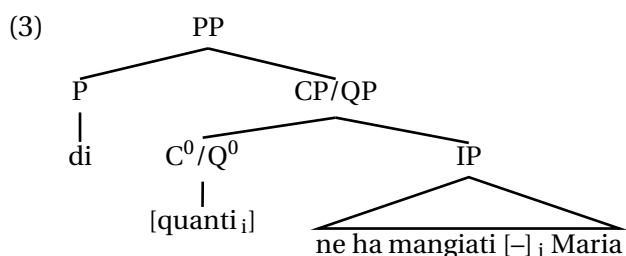
Extending this analysis, several authors assumed that clausal comparatives in other languages also occur inside PPs (e.g. Brucart 2003, Merchant 2006, Pancheva 2006), and may be uniformly characterized as a kind of free relatives (e.g. Donati 1997, Pancheva 2006, Matushansky 2001). They based their proposal on examples like those in (2), for Italian, Spanish and Serbo-Croatian, respectively, where the expressions *los que*, *quanti* and *što* strongly suggest the *wh*-origin of this construction:<sup>2</sup>

<sup>1</sup>The grammatical studies incorporating the Greco-Roman heritage typically analyse comparatives as subordinate clauses and tend to include them among the adverbial clauses, the latter being characterised as sentential adjuncts (see, for instance, Cunha & Cintra (1984), Bechara (1999), and Belletti (1991), who also adopts this approach for most of the cases of sentential comparatives in Italian). Due to a certain number of properties, Generative Syntax has seen them as subordinate clauses more akin to relative than to adverbial clauses.

<sup>2</sup>As we will see later on, *di* and *de* are not the only elements that introduce the comparative clause in Italian and Spanish.

- (2) a. Paolo ha mangiato più biscotti [<sub>PP</sub> di [<sub>CP</sub> [<sub>wh</sub> quanti]<sub>i</sub>] ne ha  
 Paolo has eaten more cookies than how much of-them has  
 mangiati [-]<sub>i</sub> Maria]]  
 eaten Maria  
 'Paolo has eaten more cookies than those that Maria has eaten.' (Donati 1997)
- b. Juan compró más periódicos [<sub>PP</sub> de [<sub>CP</sub> los que compró  
 Juan bought more newspapers than theMASC.PL that bought  
 Maria]].  
 Maria  
 'Juan bought more newspapers than those that Maria bought.' (Brucart 2003)
- c. Marija je viša [<sub>PP</sub> nego [<sub>whP</sub> (što je) Petar]].  
 Marija is taller than what is Petar  
 'Mary is taller than Petar.' (Pancheva 2006)

Donati (1997), for instance, adopts the raising analysis of Kayne (1994) and claims that comparative clauses, like the remaining free relatives, are defective relatives lacking the syntactic layer of the D-phrase embedding the clause. In these circumstances, comparatives involve the movement of a determiner-like head to C, instead of a DP movement to [Spec, CP], as represented in (3), for the comparative clause in (2a):



At a first glance, sentential comparatives in EP seem to corroborate the Prep+whP analysis, as can be seen in (4).

- (4) Ele comprou mais jornais do que nós comprámos.  
 he bought more newspapers than we bought.  
 'He bought more newspapers than we bought.'

In fact, the comparative connector *do que* is apparently constituted by the preposition *de* 'of' plus the expression *o que*, which also occurs in wh-phrases in this language, see (5):

- (5) O que te agrada também nos agrada a nós.  
 the what you please also us please to us.  
 'What pleases you, also pleases us.'

However, the syntactic behaviour of *do que* in comparatives shows that there is no empirical support for this hypothesis. First of all, in EP comparatives, *de* is not independent from the expression *o que*. Thus, in contrast with (4), the example in (6), which is

apparently the correlate of (2a) in Spanish, does not have a comparative clause reading and is only interpreted as a partitive construction:<sup>3</sup>

- (6) #Ele comprou mais livros d(e) os                      que nós comprámos.  
       he bought more books of the.MASC.PL that we bought  
       ‘He bought some more books of those that we bought.’

The non autonomy of *de* in the comparative expression *do que* is corroborated by the fact that an isolated *de* may not introduce phrasal comparatives, see (7). Besides, (7) also shows that *de* in comparatives is not able to assign case.

- (7) \*Ela é mais alta de mim.  
       she is more tall of me  
       ‘She is taller than me.’

These properties distinguish *de* in EP from *than* in English, as shown by the acceptability of the English translation of (7), *She is taller than me*. We, thus, conclude that *de* in the comparative expression *do que* in EP is not a preposition.

As for *o que*, this expression behaves differently in comparatives, see (8), and in relatives clauses, where it may occur both in headed and in free relatives, as illustrated, respectively, in (9a) and (9b):

- (8) Os críticos louvaram mais o quadro [do que o artista].  
       the critics praised more the painting than the artist.  
       ‘The critics praised more the painting than the artist.’
- (9) a. Ele ouviu [tudo o [que tu disseste]].  
       he heard everything theMASC.SG that you said  
       ‘He heard everything you have said.’  
       b. Ele admira [o que é belo].  
       he admires theMASC.SG that is beautifulMASC.SG  
       ‘He admires what is beautiful.’

In relatives *o que* is structurally ambiguous (Brito 1991). In headed relatives, as in (9a), the form *o* ‘the’ is interpreted as equivalent to the demonstrative pronoun *aquilo* ‘that’ and functions as the antecedent of a relative clause headed by the complementizer *que*, as in (10a).<sup>4</sup> In free relatives, like (9b), *o que* is analysed as a single wh-phrase formed by the definite article *o*, plus the relative pronoun *que*, as in (10b):

<sup>3</sup>Sáez del Alamo (1999: 1137) notices that this kind of structures is ambiguous in Spanish, allowing both a comparative and a partitive reading. Hence, he assigns to the example in (i) the paraphrases (ii) and (iii):

- (i) Juan leyó más libros de los que compró Luis.  
       Juan read more books of the.MASC.PL that bought Luis  
       (ii) The amount of books read by Juan is greater than the amount of books that Luis bought.  
       (iii) Juan read some more books of those that Luis bought.

<sup>4</sup>In (9a), *o* is universally quantified by *tudo* ‘everything’. This fact shows that this example must be analysed as a headed relative, *tudo o* ‘everything’ being interpreted as the antecedent of the relative clause *que tu disseste* ‘that you said’.

- (10) a. [... [<sub>DP</sub> o ] [<sub>CP</sub> Op<sub>i</sub> [<sub>C</sub> que ] ... [-]<sub>i</sub>... ] ] (Headed Relative)  
 b. [...[ o que<sub>wh</sub> [<sub>C</sub>- ] ... [-]... ] ...] (Free Relative)

The first property that distinguishes *o que* in relatives and in comparatives is the existence of active  $\phi$ -features affecting the definite article *o*, the', in relatives and their absence in the comparative connector *do que*. In free relatives *o* is the masculine singular form of the definite article, as indicated in (9b) by the agreement features exhibited by the adjective *belo*, beautiful', which also takes the masculine singular form. In turn, in headed relatives, the  $\phi$ -features exhibited by the form *o* vary in accordance with those of the expression it denotes. So, *o* is masculine singular in (9a)<sup>5</sup> and (11a), but takes the form of the masculine plural, *os*, in (11b):

- (11) a. Essa criança lê tudo o que os amigos lhe dão.  
 that child reads everything the<sub>MASC.SG</sub> that the friends him/her give.  
 'That child reads whatever his/her friends give him/her.'  
 b. Livros, ela só lê os que nós lhe compramos.  
 books, she only reads the<sub>MASC.PL</sub> that we her buy  
 'As for books, she only reads those we buy her.'

On the contrary, *o* in the comparative connector *do que* is not subject to number nor gender variation, as shown by the unacceptability of (12a), in contrast with (12b) – in (12a) the feminine plural form of the definite article occurs instead of the invariable form of *o*:

- (12) a. \*Ela gosta mais das maçãs verdes das que são  
 she likes more of-the<sub>FEM.PL</sub> apples green of-the<sub>FEM.PL</sub> that are  
 vermelhas  
 red  
 b. Ela gosta mais das maçãs verdes do que das que são vermelhas.  
 she likes more of-the apples green than of-those that are red.  
 'She likes more the green apples than the red ones.'

A second property distinguishes *o que* in comparatives and in relatives: its distribution. While in comparatives the connector *o que* may coexist with a *wh*-word, see (12b) and (13), in a relative clause two *wh*Ps may not co-occur inside the same single clause, as (14) attests:

- (13) a. Os críticos louvaram mais o quadro [do que] [quem] o pintou.  
 the critics praised more the painting than who [<sub>CL</sub>it] painted  
 'The critics praised more the painting than who painted it.'  
 b. As crianças comeram mais chocolates num dia [do que] [os que  
 the children eat more chocolates in-a day than the<sub>MASC.PL</sub> that  
 tu comes numa semana.]  
 you eat in-a week  
 'The children eat more chocolates in a day than those that you eat in a week.'

<sup>5</sup>Portuguese does not have a specific form for the neuter gender of the definite article; it uses, instead, the masculine.

- (14) a. \*Os críticos louvaram [o                      que] [quem] pintou.  
           the critics    praised    theMASC.SG what whom    painted  
       b. \*Os críticos louvaram [os                      que] [quem] pintou.  
           the critics    praised    theMASC.PL that whom    painted

Finally, *do que* in comparatives differs from true whP in allowing for gapping, as shown by the contrast in acceptability between (15a) and (15b):

- (15) a. Ele compra menos jornais            *do que* nós [-] livros.  
           he buys    less    newspapers than    we    books  
           ‘He buys less newspapers than we buy books.’  
       b. \*Ele escreve romances e    admira quem [-] poemas.  
           he    writes    novels            and admires who            poems

In sum, the data presented in this section show that there is no evidence for analysing the comparative connector *do que* in EP as constituted by a preposition plus a wh phrase.<sup>6</sup> In the type of comparatives we are studying, *do que* behaves like a “fossilized” form where no segmentation seems to be justified in synchronic terms. In the next section, we will show that non-canonical comparative relatives in EP and other Romance languages require a more detailed analysis than they have received in most of the syntactic approaches to comparatives.

### 3 The structure of the comparative clause – a cross linguistic approach

As suggested in the previous section, comparative clauses in EP display two different structural patterns: either they do not exhibit any wh phrase, and present an implicit quantificational element, as proposed in Bresnan 1973 (see (16)); or they are constituted by a headed or free relative clause (cf. (17)).<sup>7</sup> In both cases the comparative

<sup>6</sup>Spanish and Italian also have comparative connectors with a closer behaviour to *do que* in Portuguese, respectively, *que* and *che*:

- (1) (i) Juan compró más libros *que* los                      *que* vendía Luis. (Sáez del Álamo 1999: 1138)  
           Juan bought    more books than theMASC.PL that sold    Luis  
           ‘Juan bought more books than Luís has sold.’  
       (ii) Gianni hà ascoltato più concerti con te    *che* opere con lui. (Belletti 1991 : 848)  
           ‘Gianni has attended more concerts with you than operas with him.’

As shown in (i) *que* in Spanish (as in Portuguese) may also co-occur with a relative clause; similarly, *che* in Italian accepts gapping, in contrast with *di quanti*, cf. \**Gianni hà ascoltato più concerti con te di quante opere con lui*. (Belletti 1991: 848).

<sup>7</sup>The behaviour of these two types of structures with respect to Gapping corroborates this claim: while Gapping is compatible with the former type of comparatives, it produces marginality in the latter one:

- (1) (i) Ela come mais chocolates *do que* tu    [-] biscoitos.  
           she eats    more chocolates than    you    cookies  
           ‘She eats more chocolates than you eat cookies.’  
       (ii) \* ??Ela come mais            chocolates num dia *do que* os    que tu    [-] num ano.  
           she eats    more chocolates in            a    day than    those that you in a    year

connector *do que* precedes the comparative clause.

- (16) a. Ela come mais chocolates do que tu comes [[Q-] biscoitos].  
 she eats more chocolates than you eat cookies  
 'She eats more chocolates than you eat cookies.'
- b. Este miúdo é mais preguiçoso do que tu és [QP-] trabalhador.  
 this kid is more lazy than you are hard-working  
 'This kid is lazier than you are hard-working.'
- (17) a. Ela come mais chocolates num dia do que os que tu comes [-] num ano.  
 she eats more chocolates in a day than those that you eat in-a year  
 'She eats more chocolates in a day than you eat in a year.'
- b. Este miúdo é mais esperto do que aquilo que tu és.  
 this kid is more smart than that that you are  
 'This kid is smarter than you are.'
- c. Ela come mais açúcar do que aquilo que devia comer [-].  
 she eats more sugar than that that she should eat  
 'She eats more sugar than what she should eat.'

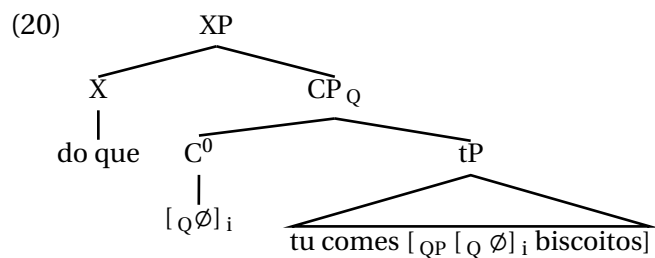
We will refer to the first type as canonical comparatives, and to the second one as relative comparatives, adopting the designations of Brucart (2003:32) for Spanish comparatives respectively in (18a) and (18b):

- (18) a. Juan compró más periódicos que novelas (compró) Maria.  
 Juan bought more newspapers than novels bought Maria  
 'Juan bought more newspapers than Mary (bought) novels.'
- b. Juan compró más periódicos de los que compró Maria.  
 Juan bought more newspapers of theMASC.PL that bought Mary  
 'Juan bought more newspapers than Mary bought.'

Italian, as noticed by Donati, on a par of canonical comparatives with the quantificational *wh* head and the consequent occurrence of the clitic *ne*, as in (19a), has also relative comparatives, characterised by the lack of a quantificational head and the consequent non-occurrence of the clitic *ne*, as in (19b):

- (19) a. Paolo ha mangiato più biscotti [<sub>PP</sub> di [<sub>CP</sub> [<sub>wh</sub> quanti <sub>i</sub>] ne ha mangiati [-] <sub>i</sub> Maria  
 Paolo has eaten more cookies than how much of-them has eaten Maria  
 'Paolo has eaten more cookies than those that Maria has eaten.'
- b. Maria ha mangiato più biscotti di [quelli [che ha mangiato <sub>t<sub>i</sub></sub> Giulia]].  
 Maria has eaten more cookies of those that has eaten Giulia  
 'Maria has eaten more cookies than those that Giulia has eaten.' (Donati 1997)

We assume that, in canonical comparatives in EP (as well as in Spanish and Italian), the structure of the comparative sentence selected by *do que* is represented as in (20) for the sentence in (16a), at SEM, the relevant level for semantic interpretation:



In this representation, the canonical comparative clause is analysed as CP, i.e. a full tensed Phase (Chomsky 2004, 2005). Internal Merge operates, raising the null quantified head,  $[Q\emptyset]$ , of the quantified phrase  $[_{QP} \emptyset \text{ biscoitos}]$  into C. The quantificational value percolates up to CP, which is interpreted as a quantificational sentence, in (20) represented as  $CP_Q$ .

In contrast, relative comparatives in EP, Spanish or Italian must be assigned a different analysis, since they present distinct properties. In fact, in relative comparatives, the quantity that always characterises the second term of comparison is simply expressed by the number: plural, when countable nouns are involved, as in (17a), (18b) and (19b); and singular when a predicate or a mass noun is at stake (17b and 17c).<sup>8</sup> In these circumstances, we admit that the structure of the *do que* complement in (17a) is represented as in (21), adopting an adjunction analysis for headed relatives<sup>9</sup>:

<sup>8</sup>Spanish is similar to Portuguese in this respect; see the example in (i):

(i) Juan compró más periódicos de los que compró Maria.

As Brucart (2003: 33) clarifies, the second element in (i) has a value of quantity and it can never appear in the singular if one wants to refer to countable objects, as shown in (ii):

(ii) \* Compró más libros del que le habíamos pedido.

The proof of the non-quantity value of (ii) is the fact that *cuanto* is impossible in the same context (iii), although it is possible in the equivalent of (i), that is (iv):

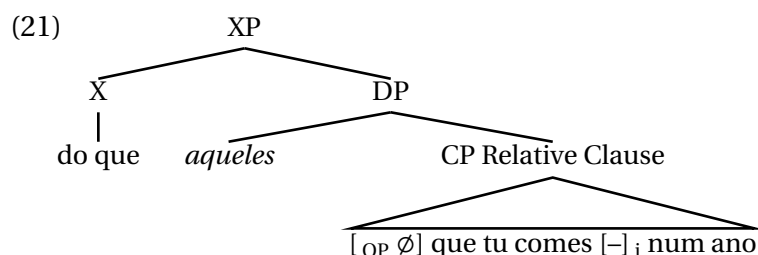
(iii) \* Compró más libros de cuanto le habíamos pedido.

(iv) Compró más libros de cuantos le habíamos pedido.

The presence of the preposition *de/di* in this sort of comparatives is then explained: the second element is always an expression of quantity, the *de/di* assumes a partitive value and the construction is not far from the so called “additive-subtractive” construction like *contrataron (a) diez personas más de las previstas* (Spanish) or *Il a acheté plus de deux livres* (French).

<sup>9</sup>For a discussion of the analysis of headed relative clauses, see, among others, Alexiadou, Law, Meinunger and Wilder (2000).





Accepting this proposal, the structure of the comparative clause does not radically differ in EP, Spanish, or even Italian. These languages have two major syntactic strategies to form comparative clauses: a quantificational comparative construction and a non-quantificational one, where the quantity is simply presented in the number (singular or plural) of the antecedent of the relative.

Yet, canonical comparatives in EP differ from Italian ones in two respects: the status of the comparative connector, in Italian, but not in EP, a preposition; and the wh nature of the quantificational element in the comparative clause – EP does not use the correspondent to Italian *quanti*, ‘how many’, in this context.

In this sense, Spanish represents an intermediary stage: as in EP, there are canonical comparatives with the connector *que*, like (22a); like Italian, and differently from Portuguese, Spanish has relative comparatives simply introduced by *de* (22b) and uses quite freely the quantified and wh-form *cuantos* in canonical comparatives, as in (22c):

- (22) a. Juan compró más periódicos que Maria.  
 Juan bought more newspapers that Maria  
 ‘Juan bought more newspapers than Maria.’
- b. Juan compró más periódicos de los que compró Maria.  
 Juan bought more newspapers of theMASC.PL that bought Maria  
 ‘Juan bought more newspapers of those that Maria bought.’
- c. Compró más libros de cuantos le habíamos pedido.  
 Bought more books of how-many him have.1pl asked  
 ‘I bought more books of those that we have asked him.’<sup>10</sup>

<sup>10</sup>Another difference that apparently distinguishes Spanish from Portuguese and French is the degree of focalisation on the second comparative element in canonical clausal comparatives. In fact, in Spanish, the compared constituent, when included in a clause where the verb and the subject are not omitted, very often occurs in first position, immediately after the connector *que*, and the subject is postponed to a postverbal position.

- (i) Juan compró más periódicos que novelas (compró) Maria.  
 Juan bought more newspapers than novels (bought) Maria  
 ‘Juan bought more newspapers than Maria bought novels.’
- (ii) ??O João comprou mais jornais do que romances (comprou) a Maria.  
 The João bought more newspapers than novels (bought) the Maria  
 ‘João bought more newspapers than Maria bought novels.’
- (iii) \*Le travail est plus difficile que détaillé n’ est le contrat.  
 the work is more difficult than detailed NEG is the contract  
 ‘The work is more difficult than the contract is detailed.’
- (iv) Le travail est plus difficile que le contrat n’ est détaillé (Cf. Brucart 2003, p. 37).  
 the work is more difficult than the contract NEG is detailed  
 ‘The work is more difficult than the contract is detailed.’

In sum, having analysed comparative clauses in Romance languages, we have seen that they may resort to different structural strategies and that more than one strategy may occur within the same language. Canonical comparatives, presenting quantificational content, may correspond either to (a kind of) Free Relative with an overt quantificational wh element (*quanti*), as in Italian and Spanish (*cuantos*), or to quantificational non-wh sentences, as in EP.

On a par with the former type, we also find relative comparatives without any quantificational element, which may be analysed as free or headed relatives and where the quantity that always characterises the second term of comparison in comparative constructions is only given by the number of the antecedent of the relative.

## 4 Island effects in Canonical Comparative Clauses in EP

In the previous section we have claimed that there is no evidence for the whP nature of canonical comparatives in EP and that only a subtype of sentential comparatives include a relative construction. Thus, our analysis faces the problem of accounting for island effects in comparatives where relative clauses are missing, that is, in the case of canonical comparatives, such as those illustrated in (23b), (24b), (25b) and (26b). In fact, since Chomsky (1977) island effects have constituted a classical argument for the wh-nature of comparatives.

- (23) a. Os alunos compram menos livros do que os professores compram [-].  
the students buy fewer books than the teachers buy  
'The students buy fewer books than the teachers buy.'
- b. \*Este aluno compra mais livros do que eu conheço um professor que  
this student buys more books than I know a teacher that  
compra [-].  
buys
- (24) a. Ela é mais alta do que a mãe era [-].  
she is more tall than the mother was  
'She is taller than her mother was.'
- b. \*Ela é mais alta do que eu me pergunto qual dos pais  
she is taller than I [CLme<sub>refl</sub>] wonder which of-the parents  
era [-].  
was
- (25) a. Eles compram menos livros do que tu compras [-] jornais.  
they buy fewer books than you buy newspapers  
'They buy fewer books that you buy newspapers.'
- b. \*Ele lê mais jornais do que eu conheço um professor que lê  
he reads more newspapers than I know a teacher that reads [-]  
livros.  
books

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Brucart suggests that in (i) the quantified element *novelas* occupies a focus position of CP, favouring an analysis along the lines of Rizzi (1997).

- (26) a. Ela é mais alta do que o pai é [-] gordo.  
 she is more tall than the father is fat  
 'She is taller than her father is fat.'
- b. \*Ela é mais alta do que eu me pergunto qual dos pais é [-]  
 she is taller than I [<sub>CL</sub>myself] wonder which of-the parents is  
 gordo.  
 fat

The examples in (23) and (24) are instances of Comparative Deletion, i.e., the compared element, which corresponds to the phrasal constituent selected by the verb in the degree clause, is omitted. In contrast, those in (25) and (26) are cases of Comparative Subdeletion, since only the quantified head is omitted in the degree clause.

However, islands effects are not a strict diagnosis for *wh*-movement. They have a broader range of occurrence: they show up in cases of *wh*-movement, but also in cases of *A'*-movement resulting from Topicalization, Focus Movement (Cinque 1990, Rizzi 1990), and Quantifier Raising (Longobardi 1991, Szabolcsi & Dikken 2003).

Thus, although rejecting that *wh*-movement is involved in comparatives in EP, following Kennedy (2002) and Matos & Brito (2002), we assume that Comparative Deletion and Comparative Subdeletion are two instances of *A'*-movement: movement of a maximal projection in Comparative Deletion; movement of a null quantified head in Comparative Subdeletion (e.g., Corver 1993, a.o.).

Notice that these two types of *A'*-movement are not equally present in clausal comparatives across languages. So, while English and EP exhibit Comparative Deletion, and a gap occurs in the complement position of the verb as a consequence of *A*-movement (cf. (27)), French and Italian only admit Comparative Subdeletion and require the presence of a clitic pronoun denoting the compared expression, (cf. (28)):

- (27) a. Mary buys more books than  $OP_i$  you buy [-]<sub>i</sub>.  
 b. Ela compra mais livros do que  $OP_i$  tu compras [-]<sub>i</sub>.  
 she buys more books than you buy  
 'She buys more books than you buy.'
- (28) a. Ces jours-ci, il a plus d'argent qu' il n \*(en) avait.  
 these days, he has more of-money than he NEG (of it) had  
 'Nowadays, he has more money than he used to have.' (Pinkam 1985)  
 b. Ho comprato più libri di quanti \*(ne) hai comprati tu.  
 have bought more books of how-many (of them) have bought you.  
 'I have bought more books than you have bought.' (Donati 1997)

These data show that in French and Italian a single type of *A'*-movement operates in comparatives, bare quantifier head movement (Donati 1997:152). They also show that bare quantifier head movement is the minimal property shared by clausal comparatives in French, Italian, Spanish, EP and English, and suggest that this movement is present both in Comparative Deletion, cf. (27), and in Comparative Subdeletion, cf. (28)-(29):

- (29) a. This desk is higher than that one is [-] wide. (Chomsky 1977)

- b. Ela é mais alta do que o pai é [-] gordo.  
 she is more tall than the father is fat  
 'She is taller than the father is fat.'
- c. Il a acheté plus de bouteilles de vin qu' il n' a acheté [-] de  
 he has bought more of bottles of wine than he NEG has bought of  
 bouteilles de bière.  
 bottles of beer  
 'He bought more bottles of wine than he bought bottles of beer.' (Pinkam 1985)

In sum, island effects exhibited in canonical comparatives in EP and other languages may result from a violation of locality conditions on Quantifier Movement or on the A'-movement of the phrasal compared complement.

## 5 The correlation between the Deg/Q marker and comparative clause and the nature of *do que*

We turn now to the correlation between the degree marker in the first term of comparison and the comparative clause. From the inspection of the involved correlates, we also expect to find an answer to the question of nature of the comparative connector (*do que*) that selects the comparative clause in EP.

### 5.1 Subordination approaches

In the literature, taking especially into account the case of adjectival comparatives, the correlation between the degree marker in the first member of comparison and the comparative clause has often been treated in terms of subordination, the comparative clause being conceived either as a complement or as an adjunct of the degree marker.

According to Bresnan (1973), Heim (2000), Bhatt & Pancheva (2004), the degree marker selects the degree clause as its argument, and the whole DegP is the specifier of a gradable predicate, as represented in (30):

- (30) [<sub>AP</sub> [<sub>DegP</sub> Deg CP] A]

The proposal in (30) has the advantage of establishing a straightforward connection between the degree marker and the comparative clause. Still, in this structure, the degree clause (CP) precedes the Adjective. So, in order to prevent the discontinuity between the adjective and the degree clause, Extraposition must obligatorily take place moving the CP into a post-gradable predicate position, as described in (31):

- (31) John is [<sub>AP</sub> [<sub>DegP</sub> [<sub>Deg</sub> -er] [<sub>CP</sub> than Bill is]] [<sub>A</sub> tall]] => John is taller than Bill is

However, Extraposition is problematic in current minimalist framework, which assumes that displacement should not be triggered only for obtaining the surface order of the constituents, but for morphosyntactic or discursive interpretative reasons, as emphasised by several authors (e.g., Donati 1997, Matos & Brito 2002, Bhatt & Pancheva 2004, Grosu & Horvath 2006).

At first sight, Abney's (1987) and Kennedy's (1997) proposals overcome this problem. According to these authors the degree word is the head of the whole comparative construction, conceived then as a DegP, and it selects the gradable predicate, AP, as its complement. In Abney's analysis, the degree clause is also a complement of Deg, as specified in (32), while in Kennedy's approach it is conceived as a modifier, as in (33):<sup>11</sup>

(32) [DegP Deg AP CP] (Abney 1987)

(33) [DegP [Deg' [Deg' Deg AP] CP] ] (Kennedy 1997)

Notice that the connection between the degree marker and the comparative clause is indirectly established in (33), since in syntax the degree clause is a modifier, hence an adjunct, of Deg'. Kennedy (1997) assumes that the degree marker and the degree clause will form a unit at LF.

Apparently (32) and (33) have no word order problems, because the comparative clause, CP, is already projected in final position. But, in fact, as noticed in Matos & Brito (2002) and Grosu & Horvath (2006), Extraposition is still required to deal with sentences in which constituents not belonging to the DegP intervene between the gradable predicate and the degree clause, as in (34) and (35):

(34) \*[Mais estudantes [do que professores [-] a biblioteca do  
more students than teachers the library of-the  
Departamento]] frequentam a biblioteca central.  
Department attend the library main  
=>

Mais estudantes frequentam a biblioteca central do que professores a  
more students attend the library main than teachers the  
biblioteca do Departamento.  
library of-the Department.

'More students frequent the main library than teachers the Department's library.' (Matos & Brito 2002)

(35) \*John is a [cleverer than Bill is] man. => John is a cleverer man than Bill is.  
(Grosu & Horvath 2006)

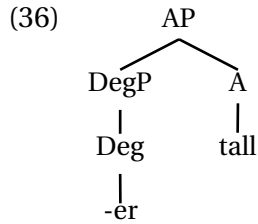
In these examples, the alleged sources of the extraposed sentences are unacceptable and involve configurations not allowed in the language – this is the case of (34), since EP is a language that does not allow backwards Gapping.

To avoid Extraposition, Bhatt & Pancheva (2004) present an alternative proposal. They assume that DegP is originally constituted by the degree marker alone, and that the gradable predicate selects DegP as its specifier, as in (36):

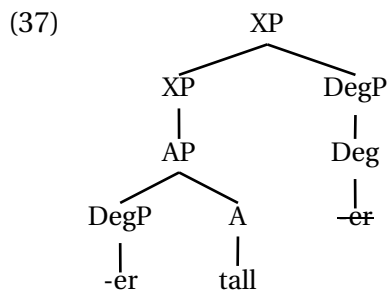
(i) [DegP AP[ Deg' Deg<sup>0</sup>XP] ]

We will not discuss this proposal.

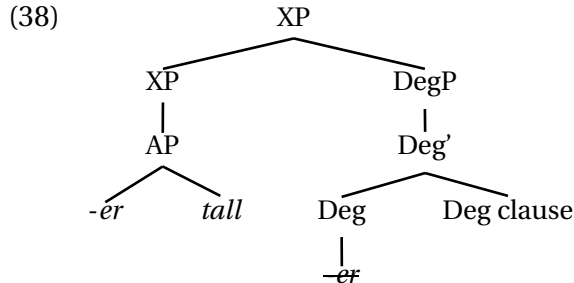
<sup>11</sup>Lechner (1999) proposes a different representation, where the Comparative clause is the complement of Deg, and the gradable predicate is the specifier of DegP, as in (i).



Then, the degree marker, being a quantificational element, covertly raises to a scope position, right adjoining to the maximal projection that contains the gradable predicate, and leaves a copy in base position, which is spelled out due to morphological constraints, (37):



Finally, the comparative clause, viewed as a *wh* CP inserted in a PP, is Late Merged as the complement of the raised unpronounced degree marker, as represented in (38):<sup>12</sup>



Although without assuming the *wh* nature of the CP, we could try to accommodate Bhatt & Pancheva's analysis to EP, hypothesising that the CP is a completive clause selected by Deg and headed by *do que*, conceived as a single complementizer instantiating Force, as illustrated in (39):<sup>13</sup>

<sup>12</sup>One of the main ideas of this analysis is that the obligatory Late Merge of the Degree Clause is not due to word order but to trace interpretation requirements (Fox 2002). For some criticisms of this analysis see Grosu & Horvath (2006).

<sup>13</sup>We discard the hypothesis that *do que* in current Portuguese occurs in split C projections, in terms of Rizzi's (1997) work, as suggested in (i), where *de* occupies the head of ForceP and *o que* the head of FinP. In fact, under this hypothesis, we would expect that TopP or FocP could occur lexically realized.

However, as shown in (iib) and (iic), no overt expression may follow *de* nor precede *o que* in comparatives in EP:

(i) ... [Force *de*] .... (Topic) ... (Focus) ... [<sub>Fin IP</sub> *o que* ....]

(ii) a. A Paula compra mais livros do que a Ana compra [-] revistas.  
           the Paula buys more books than the Ana buys magazines  
           'Paula buys more books than Ana buys magazines.'

- (39) [XP [XP [AP [DegP [Deg mais]]<sub>i</sub> A] ] [DegP<sub>i</sub> [Deg' mais [CP [Force do que] ...] ] ]

Yet, this analysis presents two major problems. Firstly, Late Merge does not apply to non wh-CPs complements, but to wh-CPs acting as Adjuncts (Lebaux 1988<sup>14</sup>, Chomsky 2004) or, according to Bhatt & Pancheva (2004), to complements of Deg.

Besides, this hypothesis is inconsistent with the behaviour of clauses headed by other occurrences of the form *que* 'that' as a complementizer, in EP: while the latter excludes infinitival clauses, (40b), and gapping, (41b), *do que* in comparative sentences accepts them, as shown in (40a) and (41a).<sup>15</sup>

- (40) a. Eles apreciam mais PRO descansar do que PRO ganhar o  
they appreciate more PRO rest<sub>INFINITIVE</sub> than PRO win<sub>INFINITIVE</sub> the  
concurso.  
contest  
'They appreciate more that you rest than that we win the contest.'
- b. Eles apreciam que tu descansas/ \*que tu descansares.  
they appreciate that you rest / that you rest<sub>INFINITIVE.2SG</sub>  
'They appreciate that you rest.'
- (41) a. Ela come mais bolos do que eu [-] chocolates.  
she eats more cakes than I chocolates  
'She eats more cakes than I eat chocolates.'
- b. \*Eu como chocolates e acho que ela [-] bolos  
I eat chocolates and think.1SG that she cakes  
'I eat chocolates and I think that she eats cakes.'

In sum, the comparative connector *do que* in EP is not an instance of the finite complementizer *que*. Since in EP this connector is neither a preposition nor a wh-constituent or a complementizer, its categorial nature remains to be determined.

- 
- b. \*A Paula compra mais livros [ForceP de [TopP revistas<sub>i</sub> [Fin IP *o que* a Ana compra [-]<sub>i</sub> ]]].  
the Paula buys more books of magazines that the Ana buys
- c. \*A Paula compra mais livros [ForceP de [FocP revistas<sub>i</sub> [Fin IP *o que* compra a Ana [-]<sub>i</sub> ]]].  
the Paula buys more books of magazines that buys the Ana

<sup>14</sup>Lebaux (1988) proposes Late Adjunction to deal with the contrast between relative CPs and N complement CPs, with respect to Binding effects in Reconstruction contexts. Relative clauses admit the co-reference between *he* and *John* in these contexts, (i), while complement clauses do not, (ii):

- (i) Which claim that John<sub>i</sub> made did he<sub>i</sub> later prove t?  
(ii) \*Whose claim that John<sub>i</sub> like Mary did he<sub>i</sub> deny t? (Lebaux 1988:238)

Lebaux assumes that the complement CP, not being subjected to Late Adjunction, integrates the nominal constituent that is reconstructed at LF in its original place, substituting the t(race); thus, a violation of Principle C arises, because the pronominal, *he*, binds the R-expression, *John*.

<sup>15</sup>Notice that Portuguese has two paradigms of infinitive: invariable infinitive, present in (40a), and inflected infinitive, which occurs in (40b).

## 5.2 The correlative coordination hypothesis

Considering the dependency relation that *do que* establishes with the degree word, we hypothesize that it integrates a specific kind of correlative coordination, involving quantificational correlates. In fact, the contrasts in (42) show that the comparative connectors change in accordance with the form of the degree marker — *mais* ‘more’ and *menos* ‘less’ determine the occurrence of *(do) que* ‘than’; *tão* ‘as much’ and *tanto(s)* ‘as many’ require the presence of *como* ‘as’:

- (42) a. O Pedro é mais/menos aplicado do que o irmão.  
the Pedro is more/less diligent than the brother  
‘Pedro is more/less diligent than his brother.’  
b. O Pedro é tão aplicado como o irmão.  
the Pedro is as diligent as the brother  
‘Pedro is as diligent as his brother.’  
c. \*O Pedro é mais aplicado como o irmão.  
the Pedro is more diligent as the brother  
d. \*O Pedro é tão alto do que o pai é gordo.  
the Pedro is as tall than the father is fat

Assuming that comparative constructions in EP exhibit a specific kind of correlative coordination, we can explain the parallelism between the examples in (42) and those in (43), presenting standard correlative coordination: while *não só* correlates with *mas também* or *como* (cf. (43)), *tanto* only co-occurs with *como* (see the contrast between (43a) and (43b)).

- (43) a. Tanto o Pedro como a Ana gostam desses livros.  
both the Pedro as the Ana like of-these books.  
‘Both Pedro and Ana like these books.’  
b. Não só o João {mas também / como} a Ana leram esse artigo.  
not only the João but also / as the Ana read that article  
‘Not only João but also Ana read that article.’  
c. \*Tanto o Pedro mas também a Ana gostam desses livros.  
both the Pedro but also the Ana like of-these books  
‘Both Pedro but also Ana like these books.’

The idea that comparatives, or at least some subtypes of comparatives, are specific cases of coordination is not new (see, a.o., Napoli 1983, Lechner 1999, 2001, Culicover & Jackendoff 1999, Sáez del Álamo 1999, Matos & Brito 2002, Abeillé & Borsley 2006<sup>16</sup>). In fact, several properties argue in favour of the coordinate nature of canonical comparatives in EP.<sup>17</sup>

<sup>16</sup>Reconsidering the proposals of Culicover & Jackendoff (1999) with respect to correlative comparatives, Abeillé & Borsley (2006) claim that this construction should be syntactically analysed as an instance of syntactic subordination in English, either as a case of subordination or coordination in French, according to the speaker’s grammar.

<sup>17</sup>Identical behaviour is exhibited, in Spanish, by sentential comparatives making use of the connector *que*, as shown in Sáez del Álamo (1999):



First of all, the comparative connectors, just like conjunctions, may connect phrasal constituents (as well as sentential constituents). In (44), the interrogative *wh* word *quantos* ‘how many’ affects the comparative phrase *mais dicionários do que enciclopédias* and not a sentence:

- (44) [Quantos [mais dicionários do que enciclopédias]] há nesta  
 ‘How-many more dictionaries than encyclopaedias are there in-this  
 biblioteca?  
 library?’

Besides, clausal comparatives in EP present Coordinate Structure Constraint effects, (46), and allow Across-the-Board extraction, (47):

- (45) O Luís é mais inteligente do que o João é trabalhador.  
 the Luís is more intelligent than the João is hard-working  
 ‘Luís is more intelligent than João is hard-working.’
- (46) \*O que<sub>i</sub> é o Luís mais t<sub>i</sub> do que o João é trabalhador?  
 what is the Luís more than the João is hard-working?
- (47) O que<sub>i</sub> é o Luís mais t<sub>i</sub> do que o João é t<sub>i</sub>?  
 what is the Luís more than the João is  
 ‘What is Luís more than John is?’

Moreover, comparatives, like coordinate sentences, allow Gapping (48), a construction typically banned from subordination, as shown by the unacceptability of *que ela [-] aos filhos* in (49):

- (48) Ele lê mais romances aos alunos do que ela [-] aos filhos.  
 he reads more novels to-the students than she to-the children  
 ‘He reads more novels to his students than she to her children.’
- (49) \*Ele lê romances aos alunos e pensa que ela [-] aos filhos.  
 He reads novels to-the students and thinks that she to-the children.

Finally, comparative connectors, like conjunctions, are insensitive to the(un)finiteness of the clauses they connect, see (50) and (51):

- (50) a. Eles precisam menos de ler romances do que de trabalhar.  
 they need less of read.<sub>INFINITIVE</sub> novels than of work.<sub>INFINITIVE</sub>  
 ‘They need less to read novels than to work.’

- 
- (i) a. Más libros compró Juan ayer que vendió Luis hoy. (Sáez del Álamo 1999: 1144)  
 more books bought Juan yesterday than sold Luis today  
 ‘Juan bought more books yesterday than Luis sold today.’
- b. \*Donde compró Juan más libros que Luis discos en Madrid? (Sáez del Álamo 1999: 1145)  
 where bought Juan more books than Luis disks in Madrid
- c. Dónde compró Juan más libros que Luis discos? (Sáez del Álamo 1999: 1145)  
 where bought Juan more books than Luis disks  
 ‘Where did Juan buy more books than Luis bought disks?’

- b. Eles precisam menos que tu leias romances do que trabalhes.  
 they need less that you read novels than (you) work  
 ‘They need less that you read novels than that you work.’
- (51) a. Eles precisam de ler romances e de trabalhar.  
 they need of read. INFINITIVE novels and of work. INFINITIVE  
 ‘They need to read novels and to work.’
- b. Eles queriam que tu leses romances e que trabalhasses.  
 they want that you read novels and that work  
 ‘They need you to read novels and to work.’

Adopting this hypothesis, the co-occurrence of the comparative connector with a whP in comparative relative clauses in EP comes as no surprise. In fact, in (52), *do que* relates the expression in the scope of the degree marker, *mais*, with the DP including the relative clause, *aquilo que tu és*, by means of correlative coordination:<sup>18</sup>

- (52) Este miúdo é mais esperto do que aquilo que tu és.  
 this kid is more smart than that that you are  
 ‘This kid is smarter than you are.’

In sum, the data strongly suggest the coordination status of the comparative connector *do que*. In the next section we will explore the structure to be assigned to canonical comparatives in EP in order to account for the dependency between the quantificational degree marker and the constituent headed by *do que*.

## 6 Comparatives in EP as correlative coordination

Approaches to standard correlative coordination within the Principles and Parameters framework agree in taking the second correlative as the head of the coordinate structure. However, they vary with respect to the position to assign to the first correlative, suggesting that the choice between alternatives is a matter of empirical evidence (e.g, Kayne 1994, Johannessen 2005): either the initial correlative selects the whole coordinate structure, as in (53a), or it modifies the first conjunct, as in (53b):

- (53) a. [<sub>ConjP</sub> both [<sub>ConjP</sub> John and Mary]]  
 b. [<sub>ConjP</sub> [either John] [<sub>Conj</sub> or [Mary]]]

Adopting the representation (53a) for Comparatives, we would straightforwardly account for the correlation between the degree marker and the comparative connector, as attested in (54b):

- (54) a. Ela é mais alta *do que* eu sou.  
 she is more tall than I am  
 ‘She is taller than I am.’
- b. ... [<sub>CoP</sub> [<sub>Co</sub> mais] [<sub>CoP</sub> AP [<sub>Co'</sub> [<sub>Co</sub> *do que*] CP] ] ]

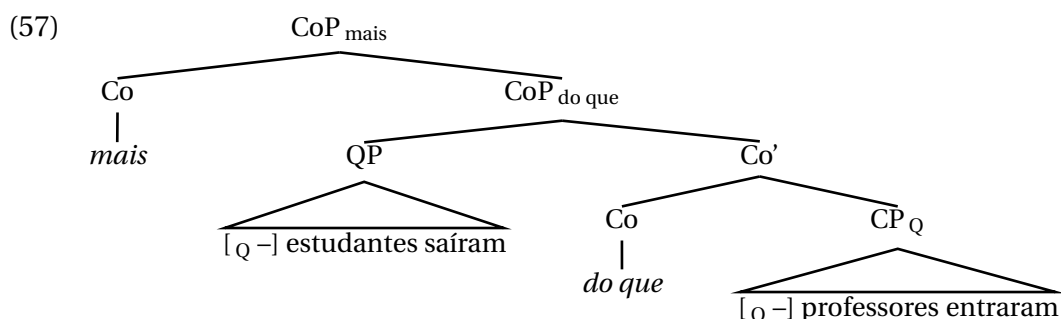
<sup>18</sup>In comparative constructions involving free relatives the second term of the correlative coordination would presumably be a CP.

This analysis is close to Donati's (1997) proposal for canonical comparatives, though Donati leaves open the categorial nature of the complement of the degree word, XP in (55):

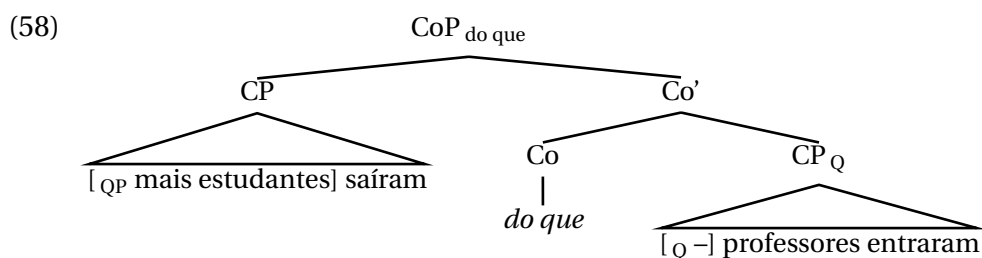
- (55) [<sub>CoP</sub> [<sub>Co</sub> *più*] [<sub>XP</sub> QP [<sub>X'</sub> [<sub>X</sub> *di*] QP/CP ]]] (cf. Donati 1997)

Yet, the representation in (54b) is empirically inadequate to account for examples like (56), because it incorrectly analyses the expression *[[Q-]estudantes saíram]* as a nominal phrase, more precisely a QP (see (57)):

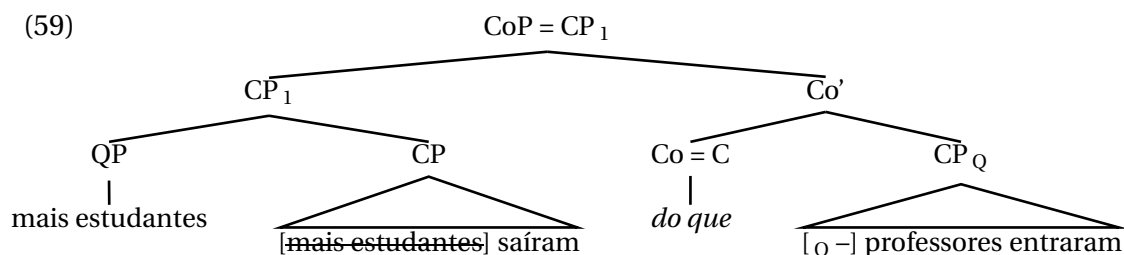
- (56) Mais estudantes saíram *do que* professores entraram.  
 more students went-out than teachers went-in  
 'More students went out than teachers went in.'



Thus, the alternative representation in (58), an extension of the one presented in (53b), seems to be preferable. In this structure, each of the compared elements is included in a full sentence projection, designated as CP and CP<sub>Q</sub> in (58):



Given (58), how to structurally capture the correlation between the degree marker and *do que*-CP<sub>Q</sub>? We believe that the relevant configuration is built in the derivation from Syntax to SEM by Quantifier Raising of the quantifier/ degree marker, as illustrated in (59) for (56a):



As often noticed, Co(nj) is a categorially underspecified head that assumes the categorial nature of its conjuncts by Agree (Johannessen (1998), Matos (1995), (2000)).

Thus, in (44), Agree operates between the Specifier of CoP and the head Co, fixing its value as a projection of C.

Since CoP is interpreted as a segment of CP<sub>1</sub>, the QP is understood as the adjunct of the whole CoP = CP<sub>1</sub> and c-commands the entire comparative structure.

Assuming, with Chomsky (2004), that Pair Merge compositionally creates a predication relation, this relation holds between the degree expression, in (59) *mais estudantes* ‘more students’ and the whole comparative structure that includes *[[Q -] professores entraram]* ‘teachers get in’ in (59). As a consequence, a dependency relation arises between the degree marker and the comparative clause.

Notice that comparative clauses are not an isolated case of correlative coordination requiring QR. Independent evidence has been presented in Larson (1985), Hendrix (2002) and Johannessen (2005) – see in (59) the correlatives *either ... or*:

- (60) a. [ [Mary *either* is driving to the airport] [or she is taking a cab] ]. (Larson 1985)  
 b. [*either* [<sub>ConjP</sub> Mary ~~*either*~~ is driving to the airport or she is driving a cab] ]  
 (Johannessen 2005)

In Syntax, *either*, a quantifier-like element, is internal to the first conjunct, as in (59a), but at SEM it must have scope over the whole coordinate structure, as represented in (59b).

In sum, the correlative coordination approach can account for the dependency relation that holds between the degree marker and the CP selected by the comparative connector.

## 7 Concluding remarks

In this paper we have analysed canonical comparatives of superiority and inferiority in EP, mainly focusing sentential comparatives in which the comparative quantifier affects a nominal constituent.

We have shown that there is no evidence that the comparative connector *do que* in EP is a preposition followed by a wh-form: neither does the comparative connector behave like a preposition, in contrast with *di* in Italian and *than* in English, nor does it behave like a wh-element. The latter property distinguishes EP from Italian, which, in the canonical form of this type of construction, exhibits a wh-constituent, *quanti*.

Despite these differences, Italian and EP, as well as Spanish, share the existence of two sorts of comparatives: canonical comparatives, presenting a strong quantificational content, which may be instantiated by (a kind of) Free Relatives with an overt quantificational wh-element, as in Italian, or CPs headed by a null quantifier, as in EP and Spanish; and relative comparatives, with a weaker quantificational content, which correspond to free or headed relatives with no quantificational wh-element.

In this perspective, the islands effects exhibited by both types of comparatives are not a compelling evidence for the systematic presence of a wh-operator, since they also occur in other cases of A'-movement, namely Quantifier Raising, and canonical clausal comparatives in EP (and in Spanish) are quantified CPs.

In order to capture the dependency relation between the degree marker and the comparative connector – the main reason invoked by the grammatical tradition to consider that comparative clauses are an instance of subordination – , we have proposed

that canonical comparatives in languages like EP must be viewed as a case of correlative coordination, presenting the quantifier/ degree expression in the first term of comparison as correlative of the *do que* connector that selects the comparative clause. It is this connector that heads the correlative coordinate structure.

The semantic relation between these two constituents is structurally captured at SEM: as a consequence of Quantifier Raising, a Pair Merge configuration arises and a predication relation is established between the quantifier/ degree expression and the whole compared structure headed by the comparative connector.

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